Abstracts

A novel equivalent circuit and modeling method for defected ground structure and its application to optimization of a DGS lowpass filter

Jun-Seok Park, Jae-Ho Kim, Jong-Hun Lee, Sang-Hyuk Kim and Sung-Ho Myung. "A novel equivalent circuit and modeling method for defected ground structure and its application to optimization of a DGS lowpass filter." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 417-420 vol.1.

In this paper, a novel equivalent circuit and modeling method for a defected ground structure is proposed to design an optimized DGS lowpass filter circuit. The equivalent circuit presented in this paper has parallel capacitance to explain the fringing fields due to the defects on the metallic ground plane. Several comparisons between the EM-simulations on the DGS circuits and circuit simulations on its equivalent circuits are demonstrated to show the validity of the proposed model. Optimization for the DGS circuit is carried out by using the proposed equivalent circuit. Simulation and measurements on the fabricated DGS lowpass filter show optimized passband and stopband performance.

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